

CLAIMS

What is claimed is:

- 1           1.       A method comprising:  
2               determining whether a predetermined policy followed by a first virtual  
3       local area network (VLAN) is supported by a port of a networking device;  
4               disallowing the port membership to the first VLAN if the port fails to support  
5       the predetermined policy; and  
6               allowing the port membership to the first VLAN if the port fails to support the  
7       predetermined policy and the port constitutes a tag-only port.
- 1           2.       The method of claim 1 further comprising:  
2               disallowing the port membership to the first VLAN if the port supports the  
3       predetermined policy and is a current member of a second VLAN following the  
4       predetermined policy.
- 1           3.       The method of claim 2 further comprising:  
2               allowing the port membership to the first VLAN if the port supports the  
3       predetermined policy and is not a current member of a second VLAN following the  
4       predetermined policy.
- 1           4.       The method of claim 1, wherein the predetermined policy is associated  
2       with untagged frames.
- 1           5.       The method of claim 1 further comprising:  
2               determining whether a change of a tagging option of the port is requested; and  
3               allowing the change in the tagging option from an untagged state to a tagged  
4       state.

1           6.       The method of claim 5 further comprising:  
2           disallowing the change in the tagging option if the change in the tagging  
3 option is from the tagged state to the untagged state and the port is a member of a  
4 second VLAN following the predetermined policy.

1           7.       The method of claim 6 further comprising:  
2           allowing the change in the tagging option if the change in the tagging option is  
3 from the tagged state to the untagged state and the port is not a member of the second  
4 VLAN following the predetermined policy.

1           8.       The method of claim 1 further comprising:  
2           determining whether a change of a filtering option of the port is requested; and  
3           allowing the change in the filtering option from a "Do Not Filter" state to a  
4 "Do Filter" state.

1           9.       The method of claim 8 further comprising:  
2           disallowing the change in the filtering option if the change in the filtering  
3 option is from the "Do Filter" state to the "Do Not Filter" state and the port is a  
4 member of a second VLAN following the predetermined policy.

1           10.      The method of claim 9 further comprising:  
2           allowing the change in the filtering option if the change in the filtering option  
3 is from the "Do Filter" state to the "Do Not Filter" state and the port is not a member  
4 of the second VLAN following the predetermined policy.

1           11.      A method comprising:  
2           determining whether a selected port is a tag-only port;  
3           allowing membership of the port to a first virtual local area network  
4 (VLAN) if the selected port is a tag-only port;

5 determining whether a predetermined policy followed by the first VLAN is  
6 supported by a port of a networking device;  
7 disallowing the port membership to the first VLAN if the port fails to support  
8 the predetermined policy and the selected port is a member of a second VLAN  
9 following the predetermined policy; and  
10 allowing the port membership to the first VLAN if the port supports the  
11 predetermined policy and the selected port is not a member of the second VLAN  
12 following the predetermined policy.

1 12. The method of claim 11 further comprising:  
2 disallowing the port membership to the first VLAN if the port supports the  
3 predetermined policy and the selected port is a member of the second VLAN  
4 following the predetermined policy.

1 13. The method of claim 11, wherein the predetermined policy is  
2 associated with untagged frames.

1 14. The method of claim 11 further comprising:  
2 determining whether a change of a tagging option of the port is requested; and  
3 allowing the change in the tagging option from an untagged state to a tagged  
4 state.

1 15. The method of claim 14 further comprising:  
2 disallowing the change in the tagging option if the change in the tagging  
3 option is from the tagged state to the untagged state and the port is a member of a  
4 second VLAN following the predetermined policy.

1           16.     The method of claim 14 further comprising:  
2           disallowing the change in the tagging option if the change in the tagging  
3     option is from the tagged state to the untagged state and the port is a member of the  
4     second VLAN following the predetermined policy.

1           17.     The method of claim 14 further comprising:  
2     disallowing the change in the tagging option if the change in the tagging option is  
3     from the tagged state to the untagged state and the port is a member of the second  
4     VLAN following the predetermined policy.

1           18.     The method of claim 8 further comprising:  
2           disallowing the change in the filtering option if (i) the change in the filtering  
3     option is from the “Do Filter” state to the “Do Not Filter” state, (ii) the port is a  
4     member of a VLAN having a policy that fails to support untagged frames, and (iii) the  
5     port is a member of a second VLAN following the predetermined policy.

1           19.     A networking device comprising:  
2           a plurality of ports; and  
3           a processing unit to control membership of at least one of the plurality of  
4     ports to a policy-based virtual local area network (VLAN), the processing unit to  
5     determine whether a predetermined policy followed by the policy-based VLAN is  
6     supported by the at least one of the plurality of ports, and to allow the at least one  
7     port of the plurality of ports membership to the policy-based VLAN if the at least  
8     one port fails to support the predetermined policy and constitutes a tag-only port.

1           20.     The networking device of claim 19, wherein the processing unit  
2     further disallows the at least one port of the plurality of ports membership to the  
3     policy-based VLAN if the at least one port fails to support the predetermined  
4     policy.

1           21.     The networking device of claim 20, wherein the processing unit further  
2 disallows membership to the policy-based VLAN if the port supports the  
3 predetermined policy and is also a current member of another VLAN following the  
4 predetermined policy.

1           22.     The networking device of claim 21, wherein the predetermined policy  
2 is associated with untagged frames.

1           23.     The networking device of claim 19, wherein the processing unit further  
2 determines whether a change of a tagging option of the at least one port is requested  
3 and allows the change in the tagging option if the tagging option is changed from an  
4 untagged state to a tagged state.

1           24.     The networking device of claim 23, wherein the processing unit further  
2 disallows the change in the tagging option if the change in the tagging option is from  
3 the tagged state to the untagged state and the at least one port is a member of another  
4 VLAN following the predetermined policy.

1           25.     A program loaded in memory of a networking device for execution  
2 therein, the program comprising:  
3           a first subprogram to determine whether a predetermined policy followed  
4 by the policy-based VLAN is supported by a port of a networking device;  
5           a second subprogram to disallow the at least one port of the plurality of ports  
6 membership to the policy-based VLAN if the at least one port fails to support the  
7 predetermined policy; and  
8           a third subprogram to allow the at least one port of the plurality of ports  
9 membership to the policy-based VLAN if the at least one port fails to support the  
10 predetermined policy and constitutes a tag-only port.